

**GRUNDIG**

# **Service Anleitung**



**12/79**

**Triumph 1421  
Triumph 1428 U  
Triumph 1721**

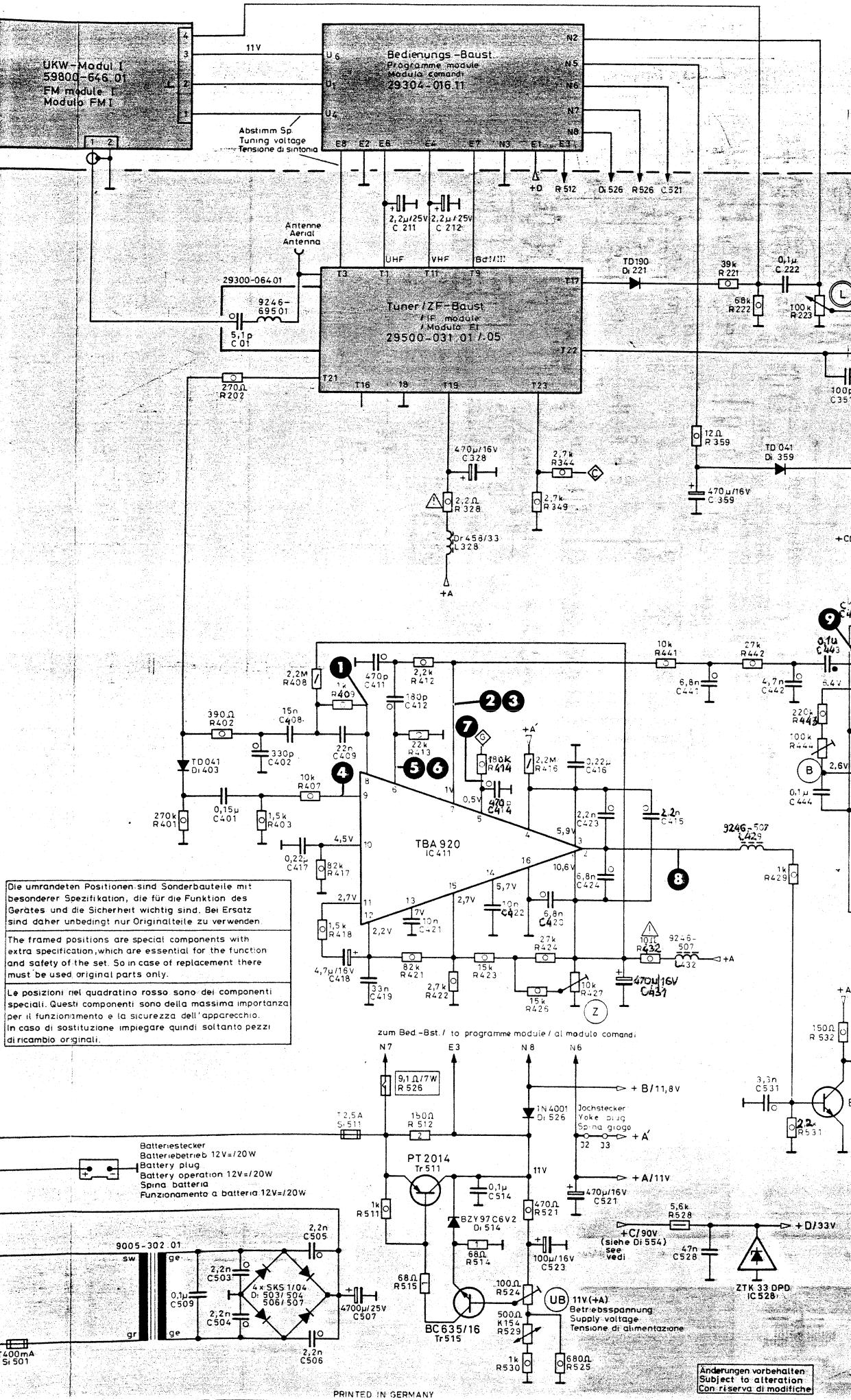
**Record 1421 SK  
Record 1421 U SK  
Record 1721 SK**

## **14" und 17" SW Portable, Saison 1979/80**

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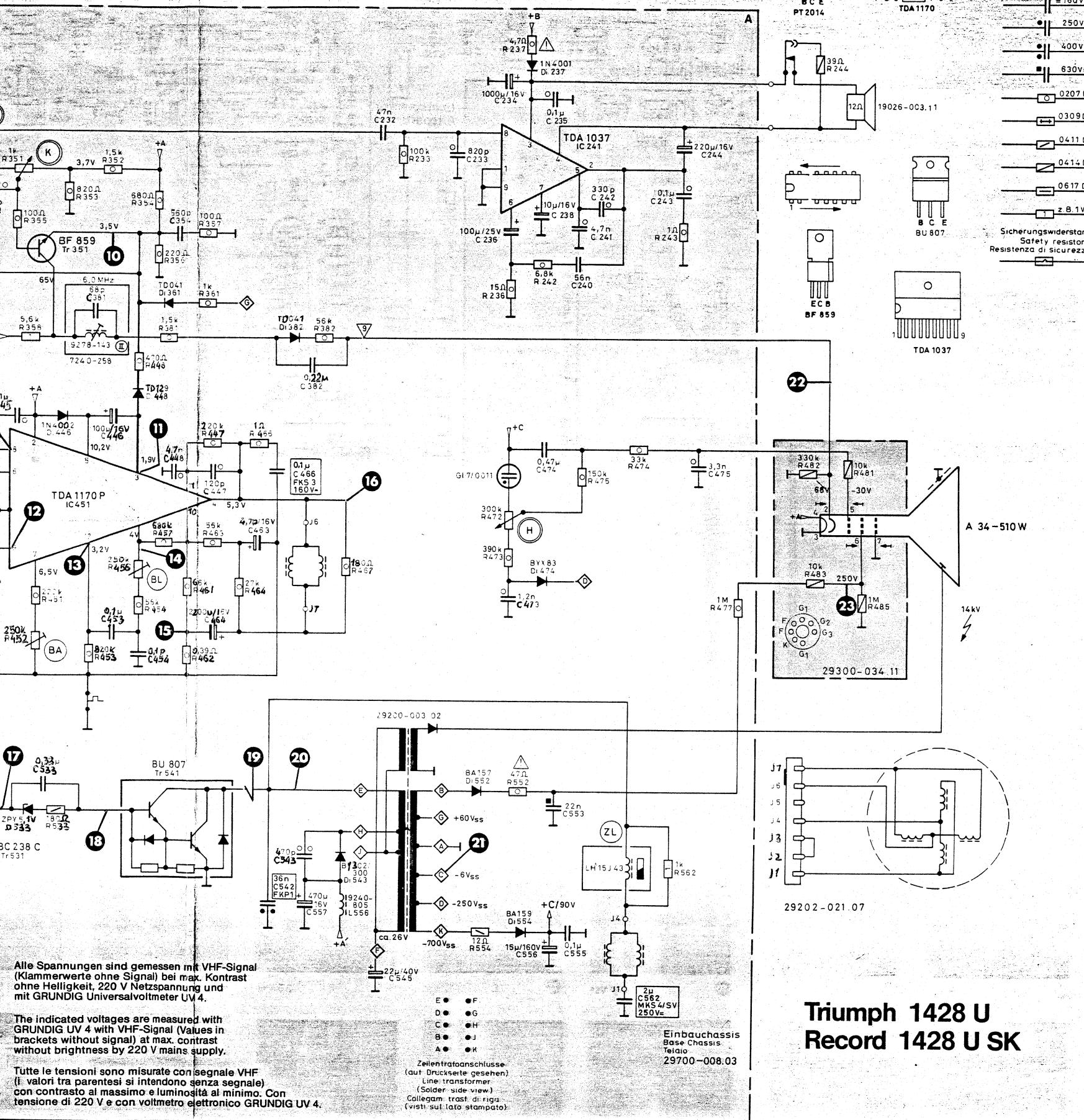
**GRUNDIG AG · D 8510 FÜRTH/BAYERN**  
**Verwaltung: 8510 Fürth, Kurgartenstraße 37, Tel. 0911/7031**  
**Kundendienstzentrum:**  
**8500 Nürnberg, Beuthener Straße 55, Tel. 0911/404031**



Die mit  $\Delta$  bezeichneten Bauelemente sind für die Gerätesicherheit absolut notwendig und entsprechen den Richtlinien des VDE bzw. IEC. Im Ersatzfall dürfen nur Bauteile mit gleicher Spezifikation Verwendung finden.

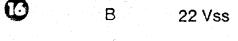
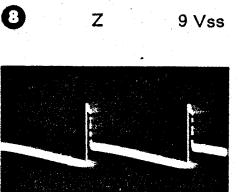
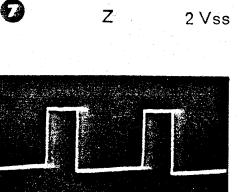
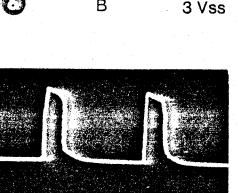
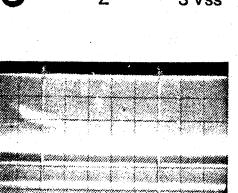
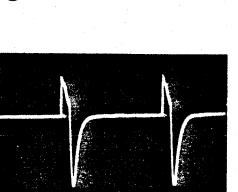
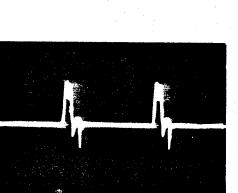
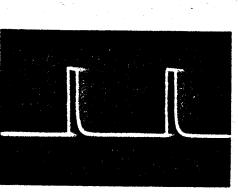
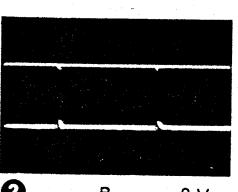
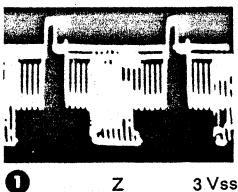
The components marked by  $\Delta$  are absolutely necessary for the safety of the set. These components meet the safety requirement according to VDE or IEC, resp. and must be replaced by parts of same specifications only.

I componenti con  $\Delta$  hanno la massima importanza per la sicurezza dell'apparecchio e sono conformi alle norme di sicurezza VDE e IEC. In caso di sostituzione impiegare quindi soltanto pezzi di ricambio originali.



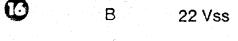
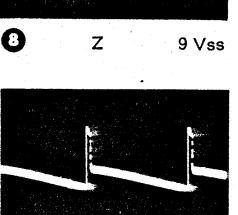
# Druckplatte 1428 U

Lötseite



10 B 1 Vss

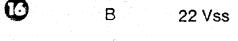
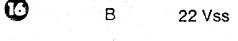
Bedienungs - Baustein



13 B 6 Vss

14 B 6 Vss

15 B 0,8 Vss



18 Z 8 Vss

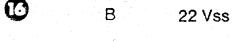
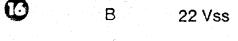
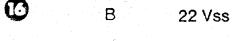
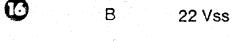
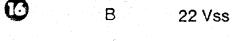
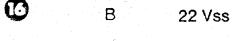
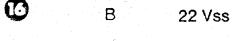
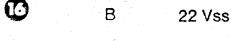
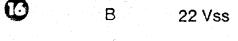
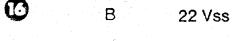
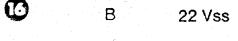
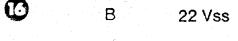
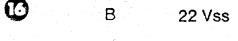
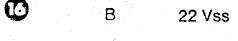
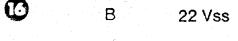
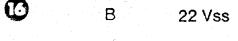
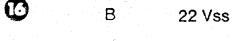
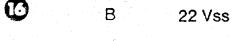
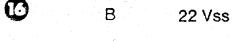
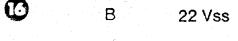
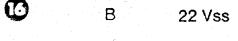
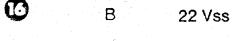
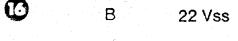
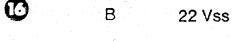
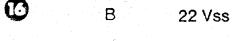
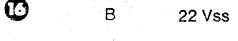
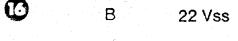
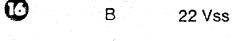
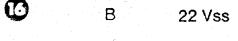
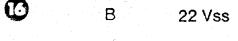
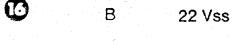
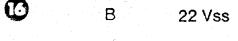
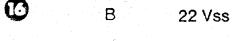
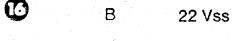
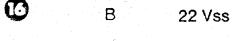
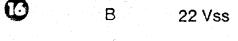
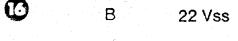
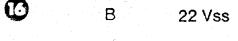
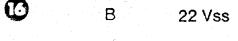
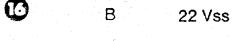
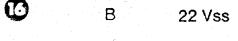
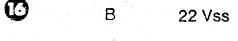
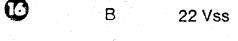
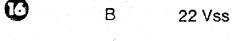
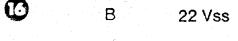
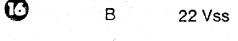
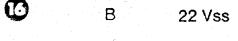
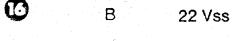
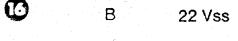
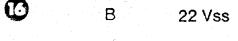
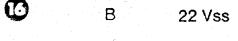
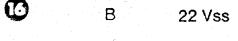
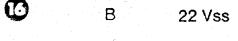
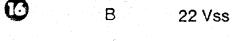
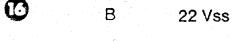
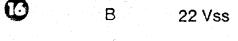
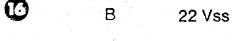
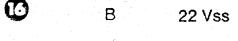
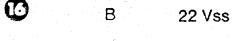
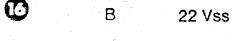
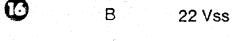
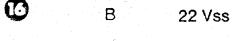
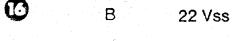
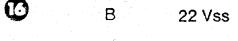
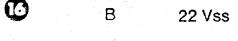
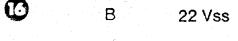
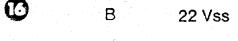
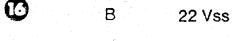
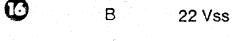
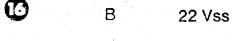
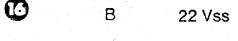
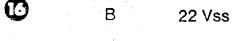
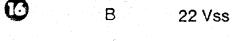
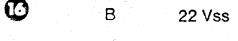
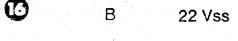
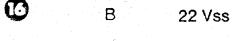
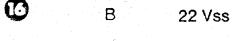
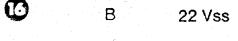
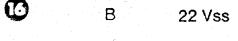
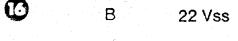
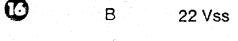
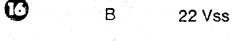
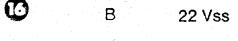
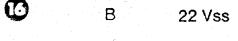
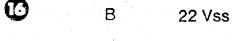
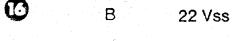
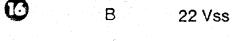
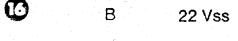
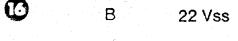
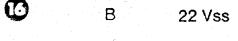
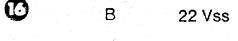
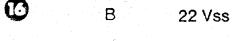
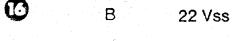
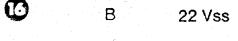
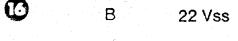
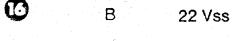
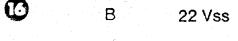
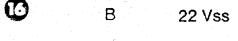
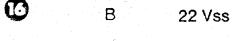
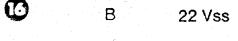
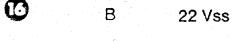
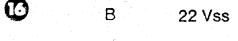
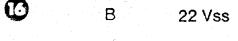
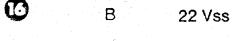
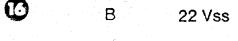
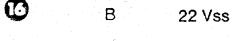
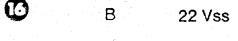
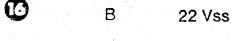
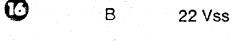
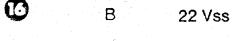
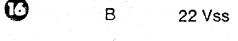
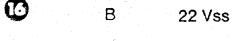
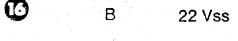
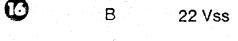
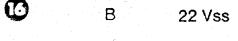
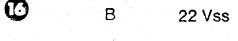
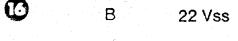
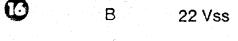
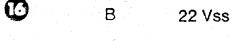
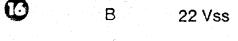
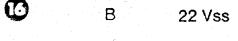
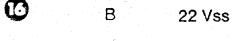
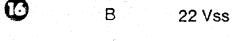
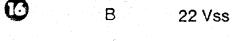
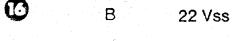
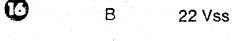
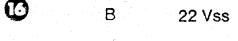
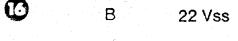
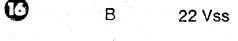
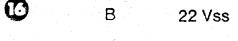
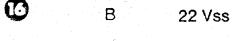
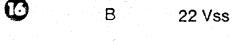
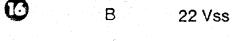
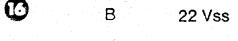
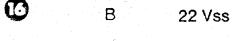
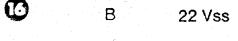
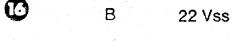
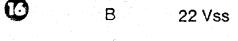
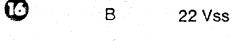
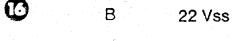
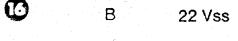
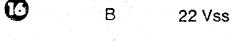
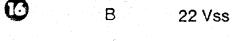
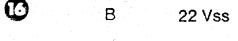
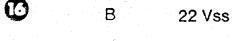
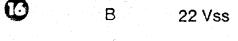
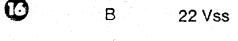
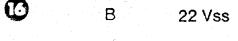
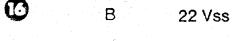
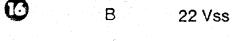
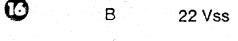
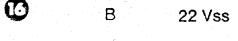
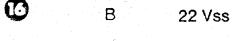
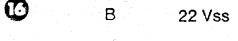
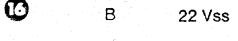
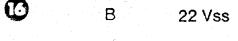
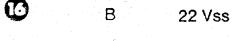
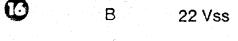
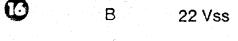
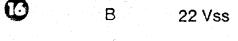
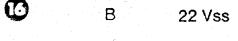
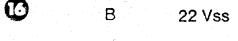
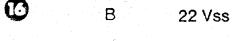
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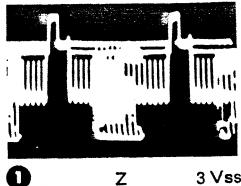
20 Z 180 Vss

21 Z -6 Vss

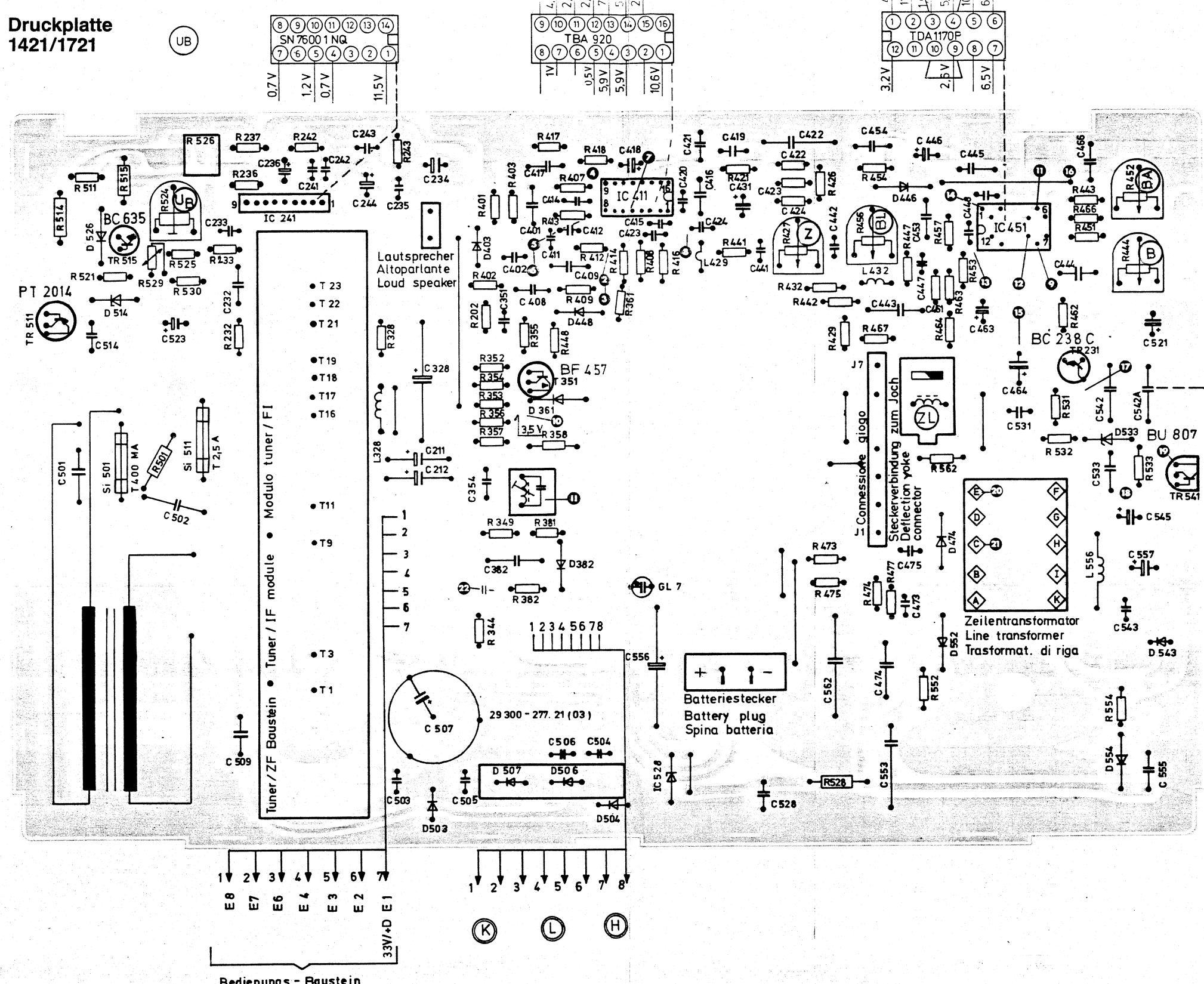
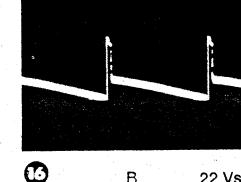
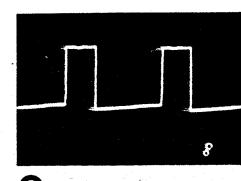
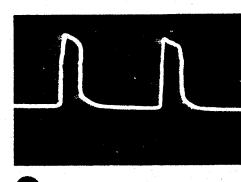
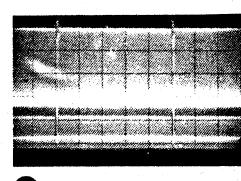
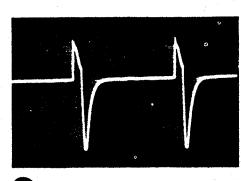
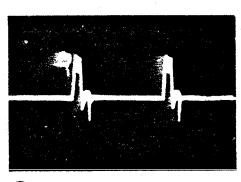
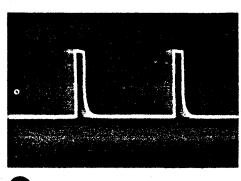
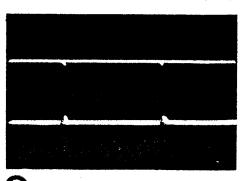
22 Z 60 Vss

23 B 25 Vss





Druckplatte  
1421/1721

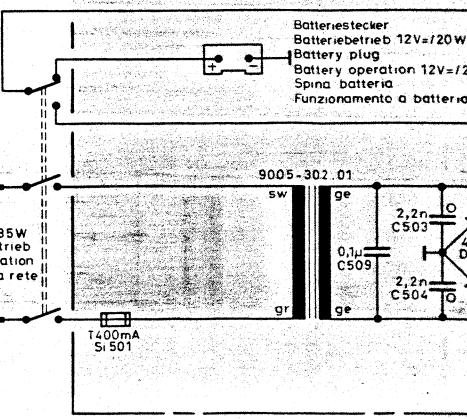


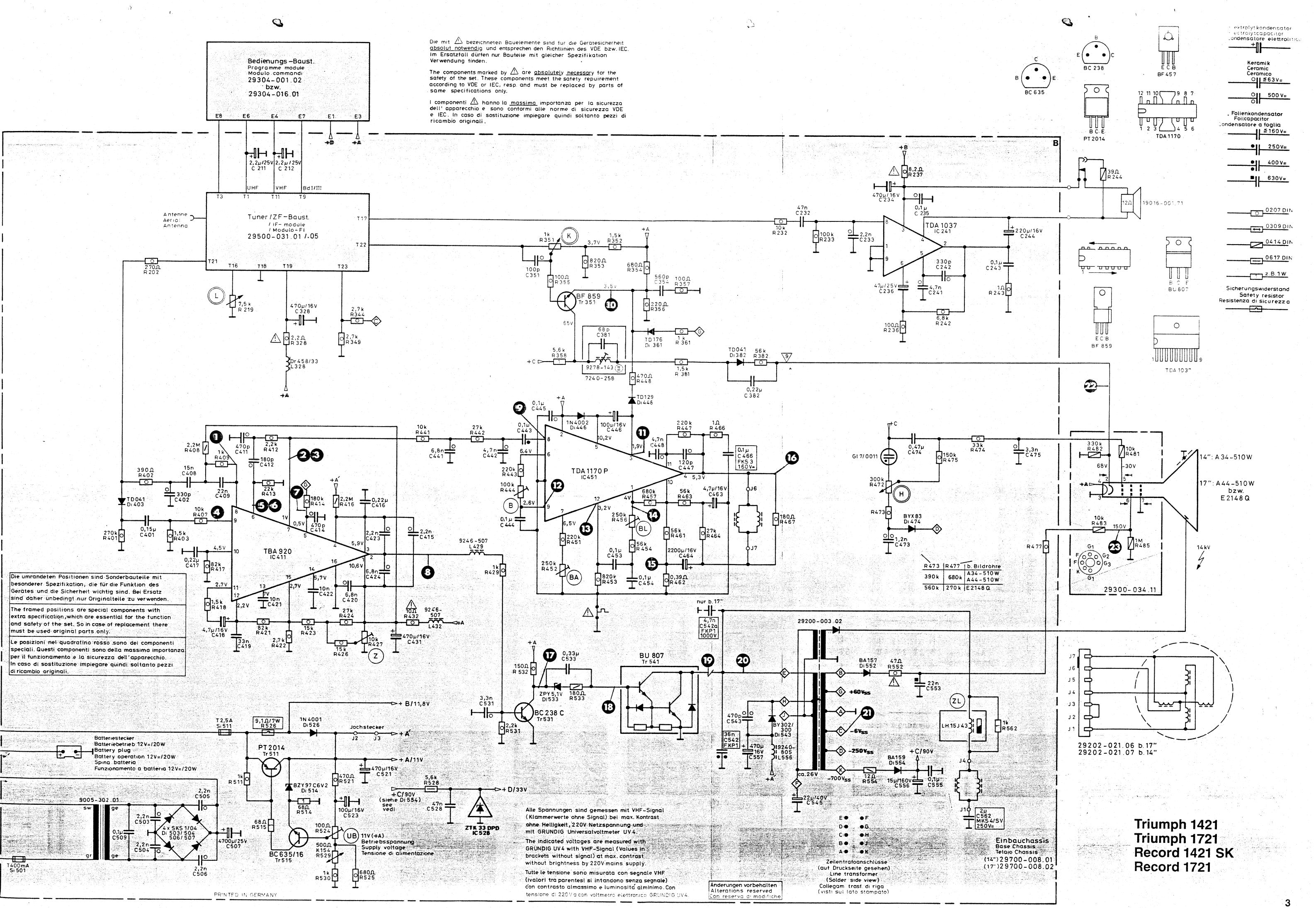
29304-001 02 Bedienungs -Bst b Triumph 1721  
29304-016 01 Bedienungs -Bst b Triumph 1421

Die umrandeten Positionen sind Sonderbauteile mit besonderer Spezifikation, die für die Funktion des Gerätes und die Sicherheit wichtig sind. Bei Ersatz sind daher unbedingt nur Originaleile zu verwenden.

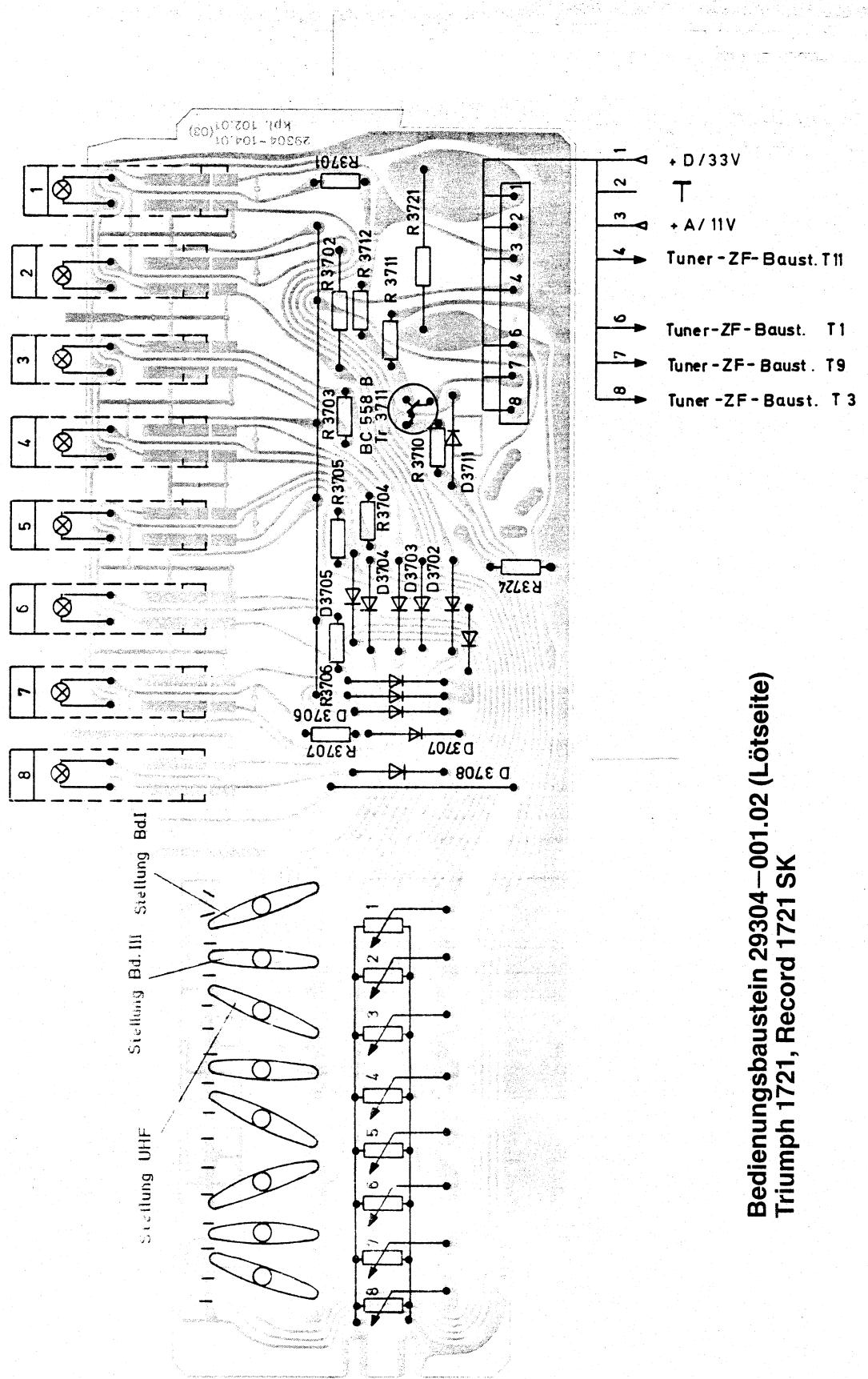
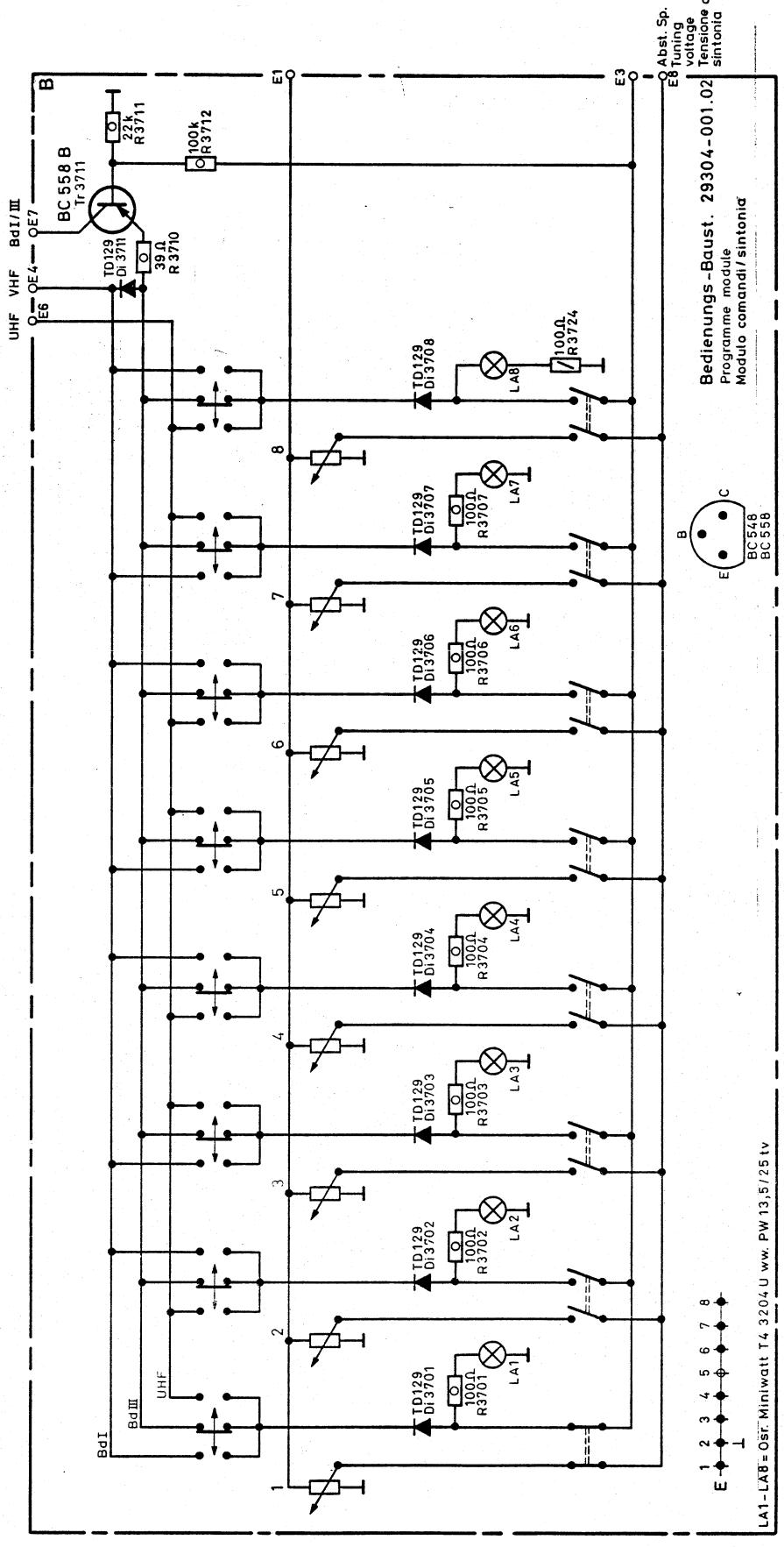
The framed positions are extra specification, which are essential for the function and safety of the set. So in case of replacement there must be used original parts only.

Le posizioni nel quadratino rosso sono dei componenti speciali. Questi componenti sono della massima importanza per il funzionamento e la sicurezza dell'apparecchio. In caso di sostituzione impiegare quindi soltanto pezzi di ricambio originali.





**Schaltbild Bedienungsbaustein  
29304-001.02**



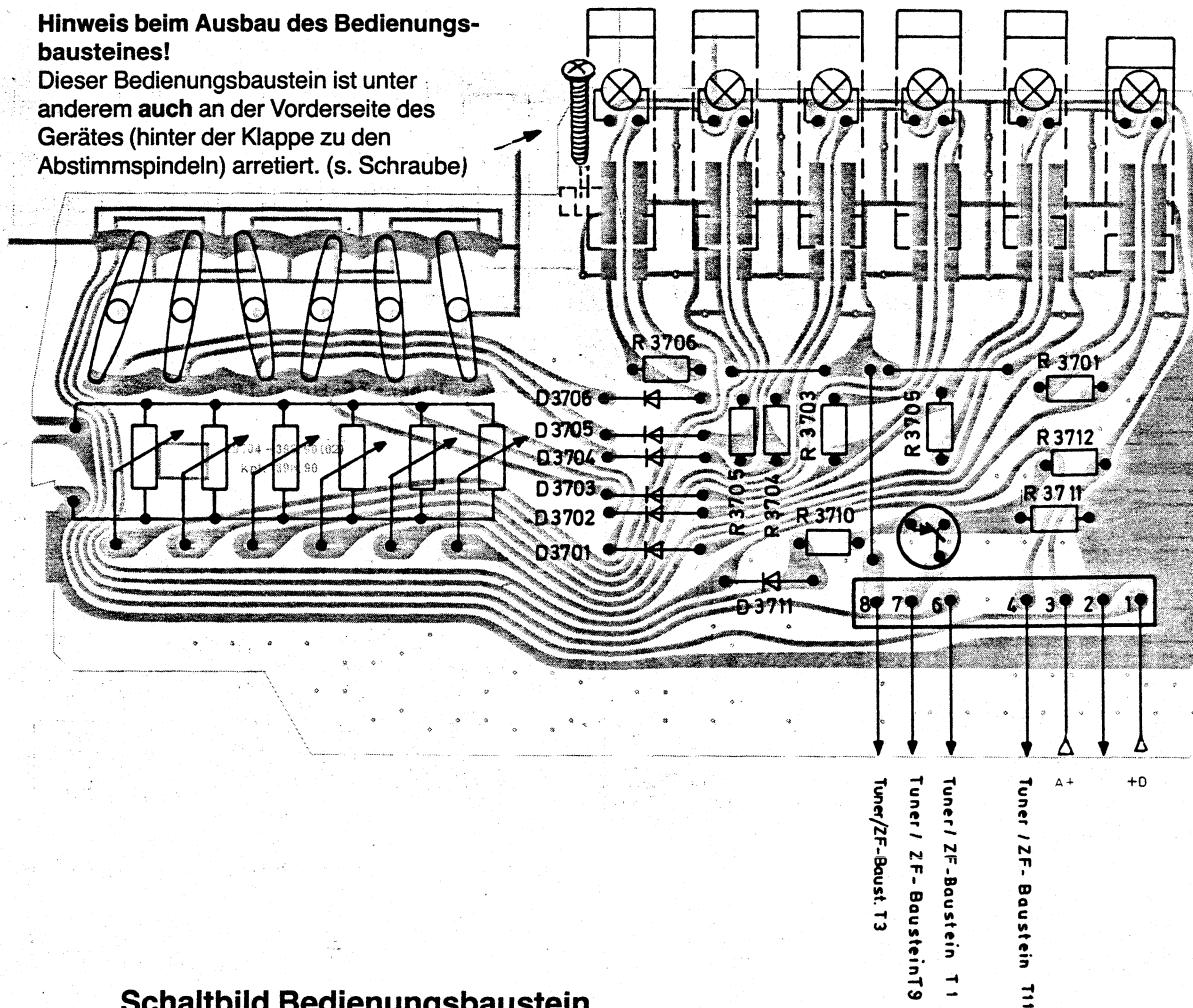
**Bedienungsbaustein 29304-001.02 (Lötseite)**  
**Triumph 1721, Record 1721 SK**

## Bedienungsbaustein 29304-016.01 (Lötseite)

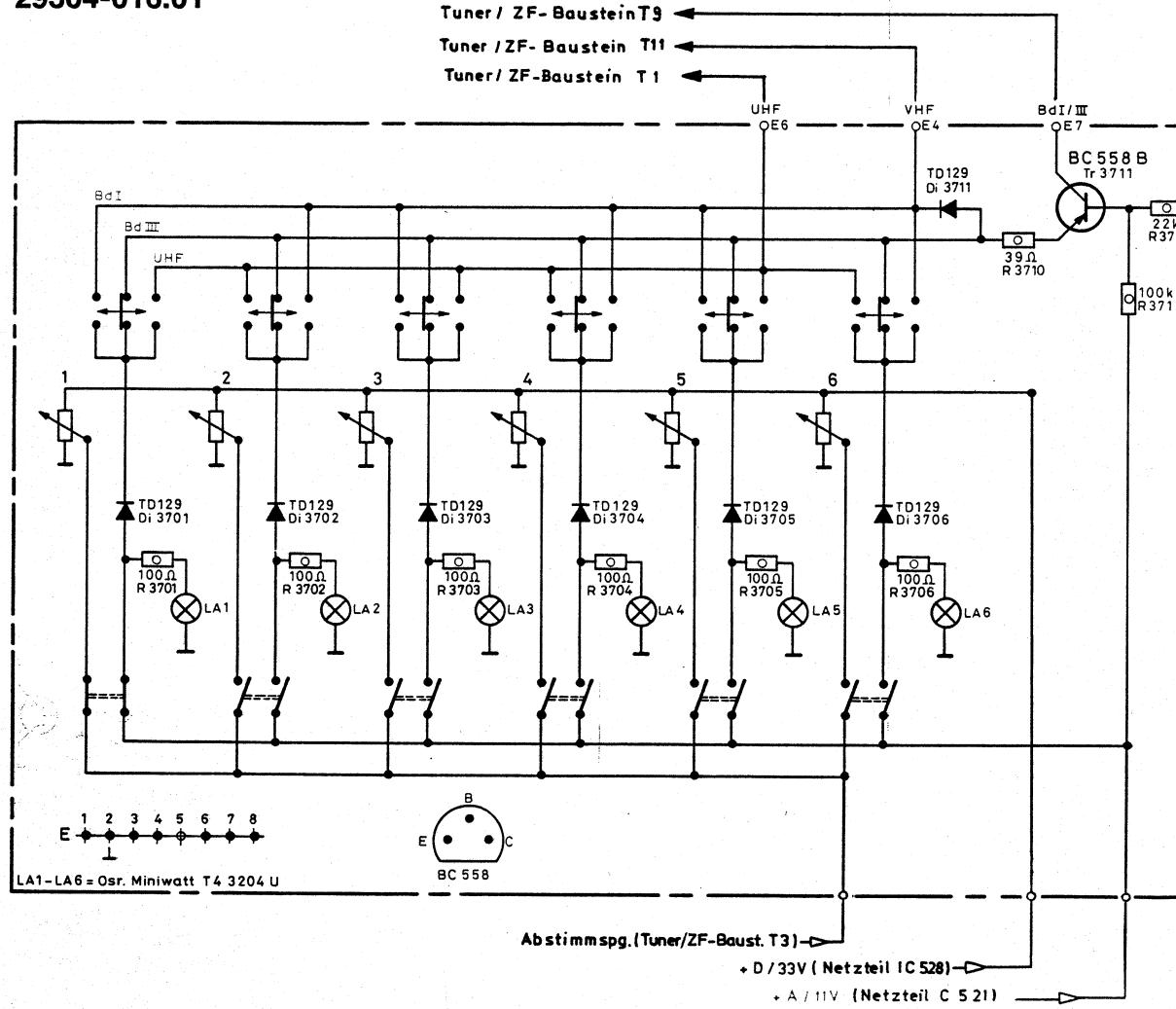
Triumph 1421, Record 1421 SK

Hinweis beim Ausbau des Bedienungsbausteins!

Dieser Bedienungsbaustein ist unter anderem auch an der Vorderseite des Gerätes (hinter der Klappe zu den Abstimmspindeln) arretiert. (s. Schraube)



Schaltbild Bedienungsbaustein  
29304-016.01

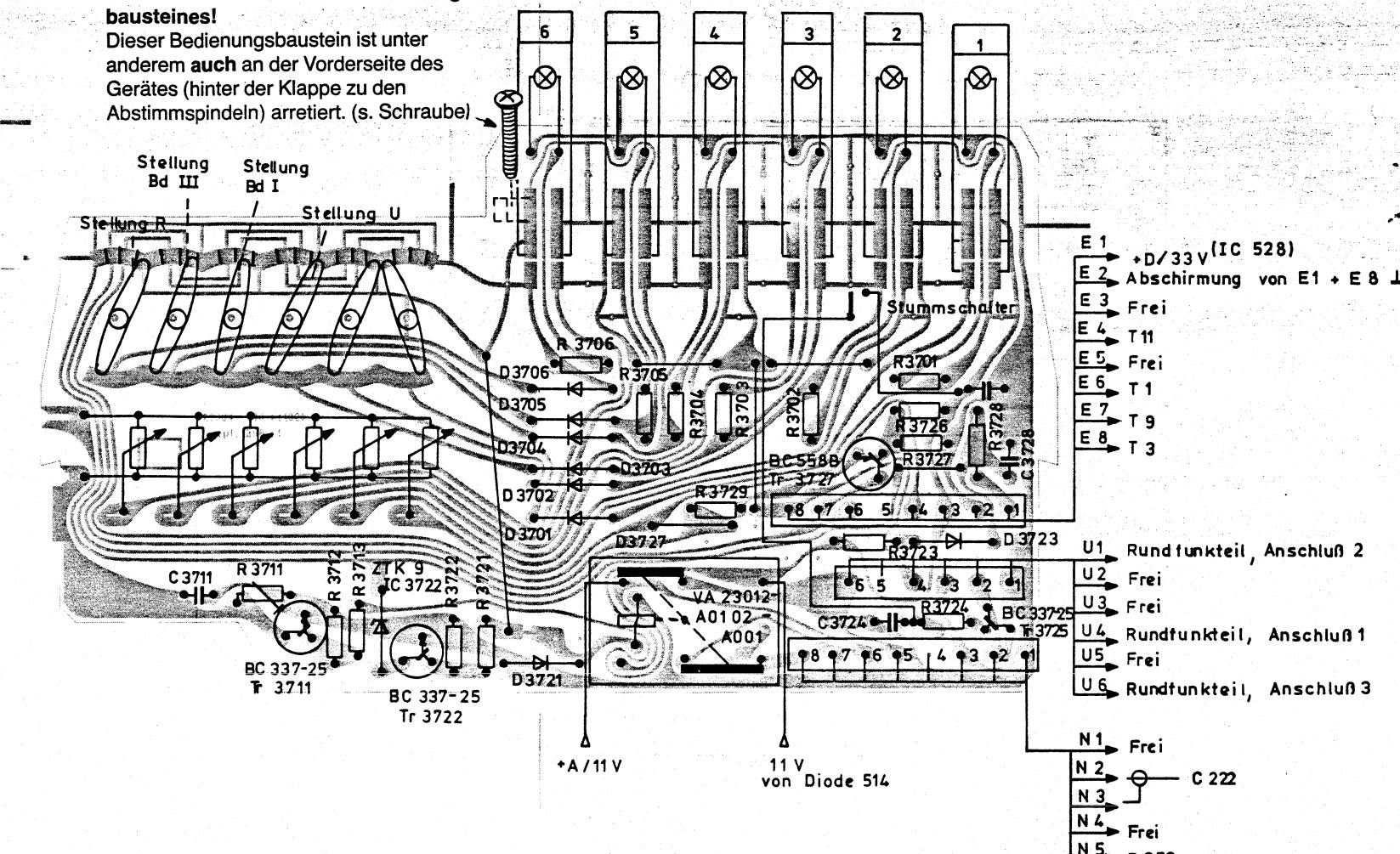


## Bedienungsbaustein 29304-016.11 (Lötseite)

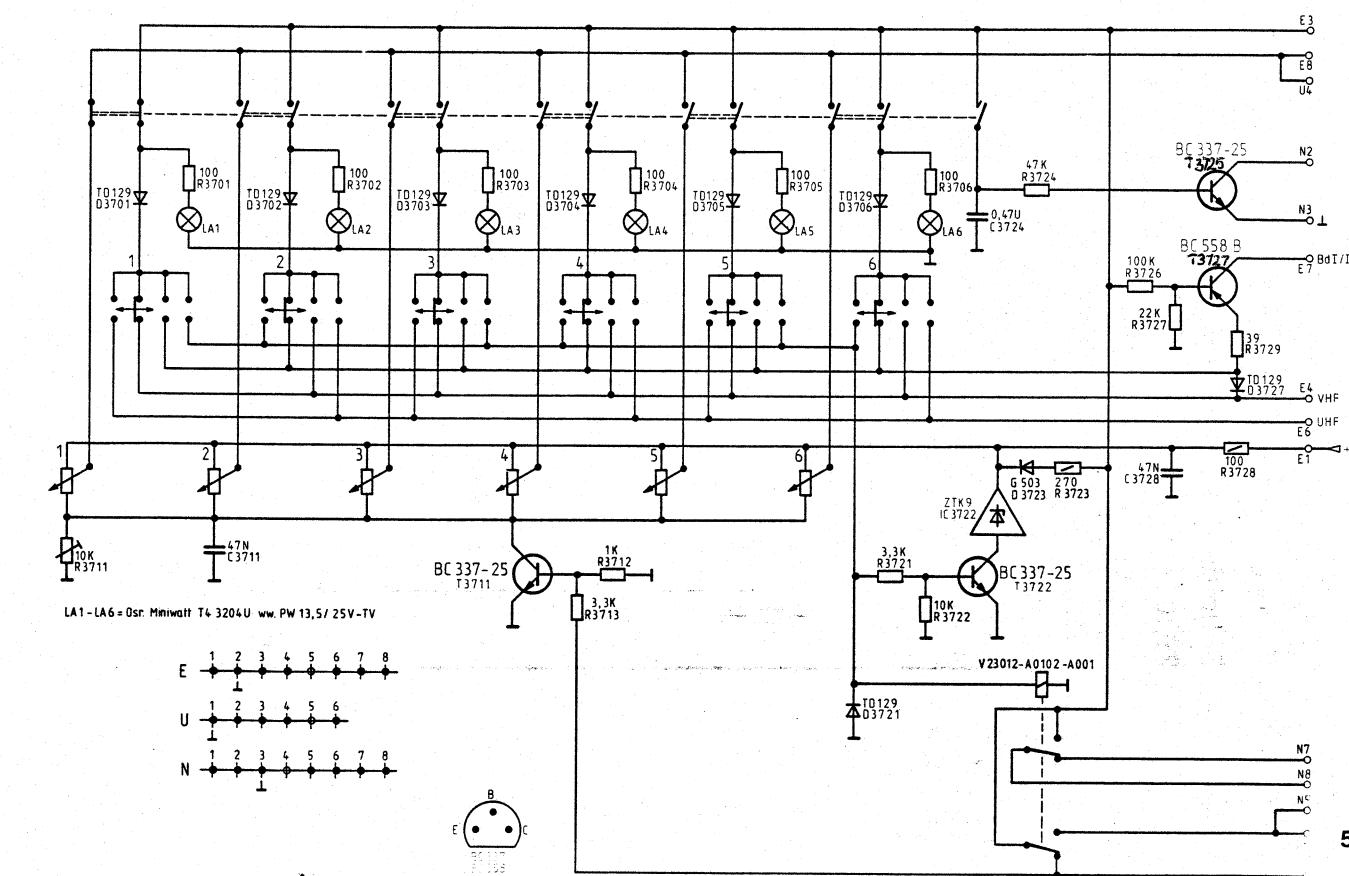
Triumph 1428 U, Record 1428 U SK

Hinweis beim Ausbau des Bedienungsbausteins!

Dieser Bedienungsbaustein ist unter anderem auch an der Vorderseite des Gerätes (hinter der Klappe zu den Abstimmspindeln) arretiert. (s. Schraube)

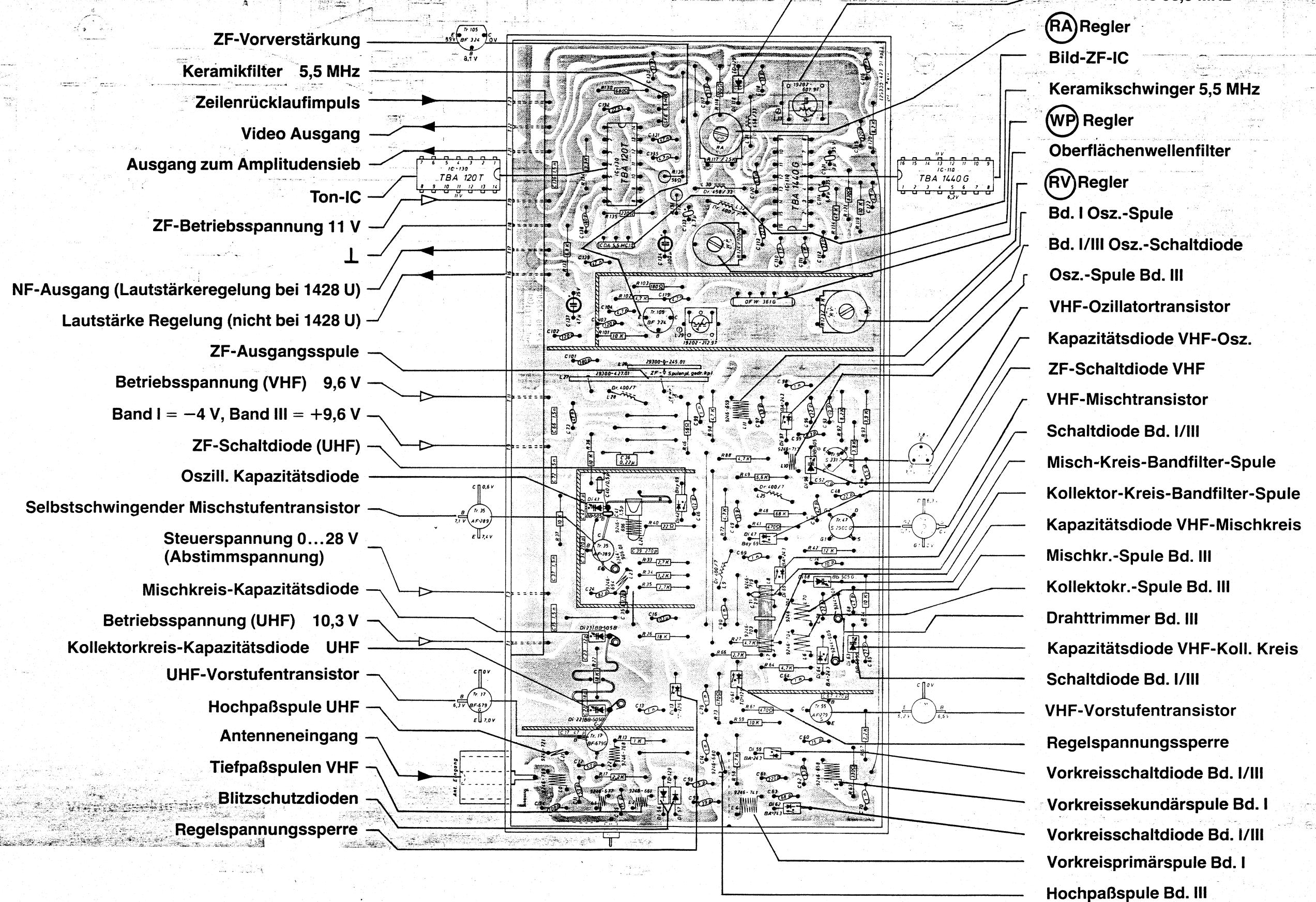


Schaltbild Bedienungsbaustein  
29304-016.11

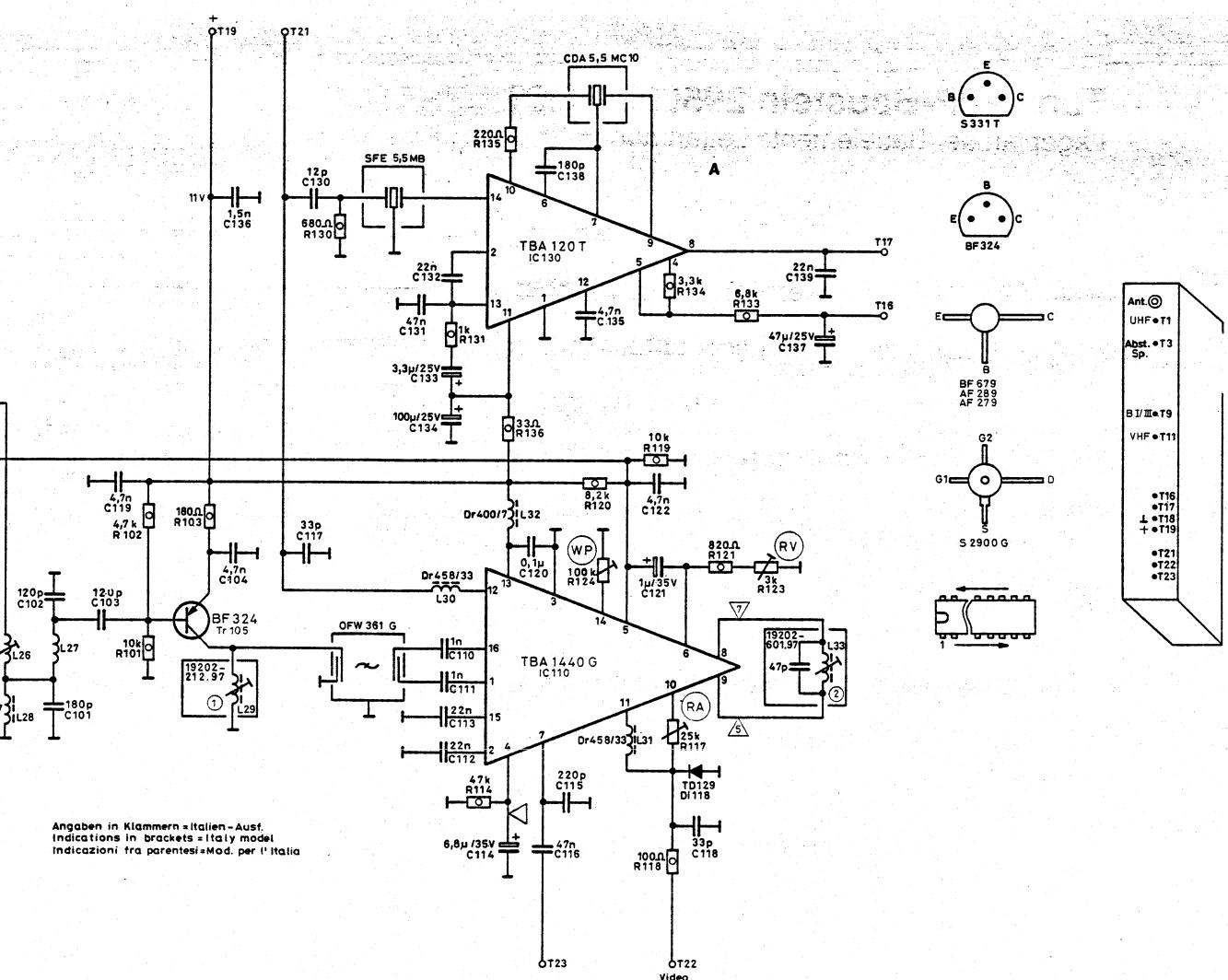
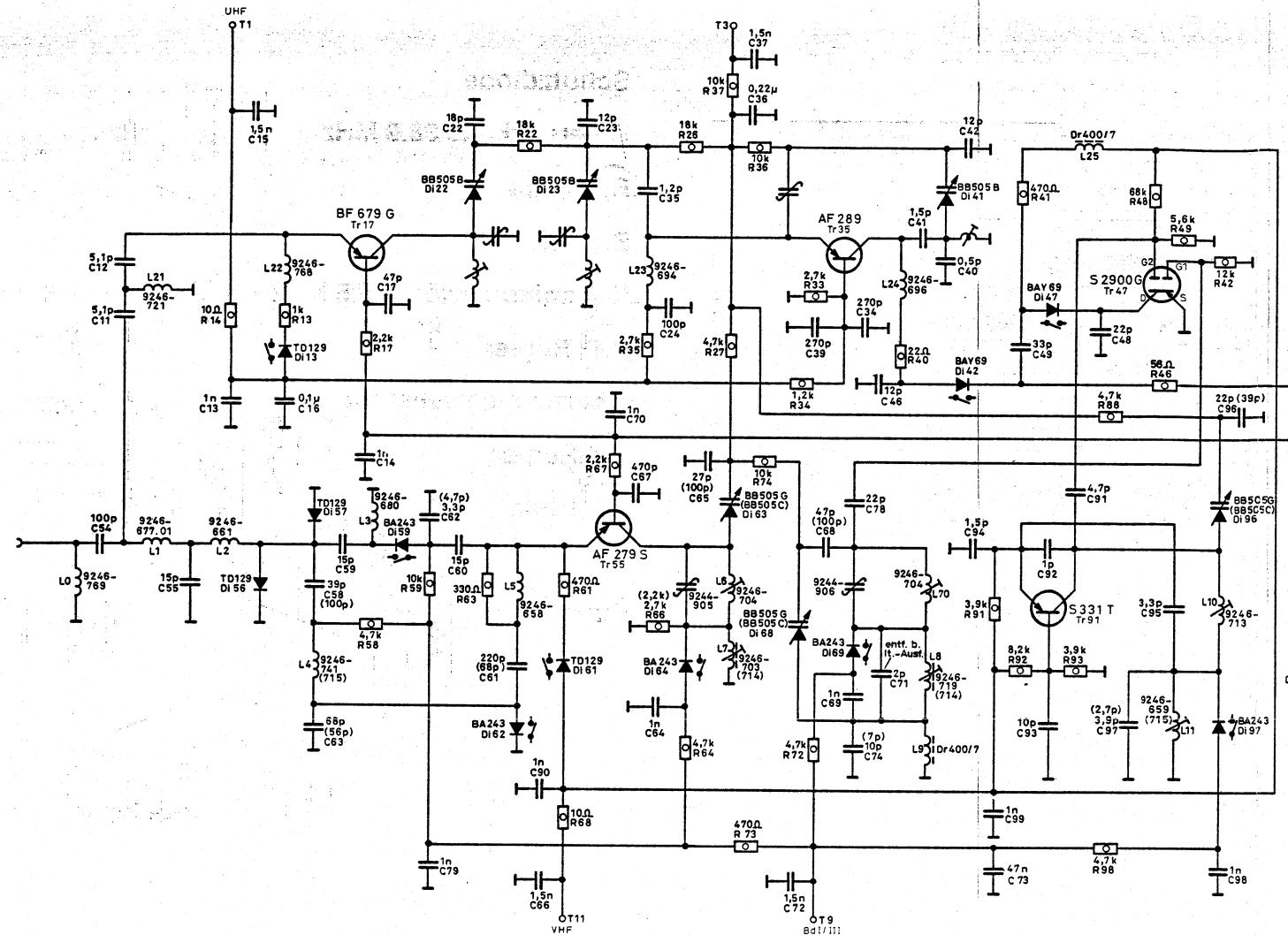


# Tuner-ZF-Baustein 29500-031.01

Lageplan der Bauelemente Leiterbahnen



**Tuner/ZF-Baustein 29500-031.01/-031.05 lt. vers.  
Schaltbild, Reglereinstellungen**



**Abgleich der Regler**

Rauschfreies Normsignal (Testbild) zuführen, Kontrastregler auf Maximum, Helligkeitsregler auf Minimum, Oszillograph an T 22 des Tuner-ZF-Bausteines, Oszillograph auf – schalten.

Mit Regler das Signalweiss auf 5,5 V stellen (Oszillogr. Abb. 1). Danach mit das Impulsdach auf 3,5 V einpegeln (Oszillogramm Abb. 2).

Vor dem Abgleich muß das UHF-Signal bis kurz vor dem Einsetzen des Rauschens abgeschwächt werden (richtige Abstimmung = 2 mV). Danach ist der Regler so einzustellen, daß die Tunerregelung gerade einsetzt.

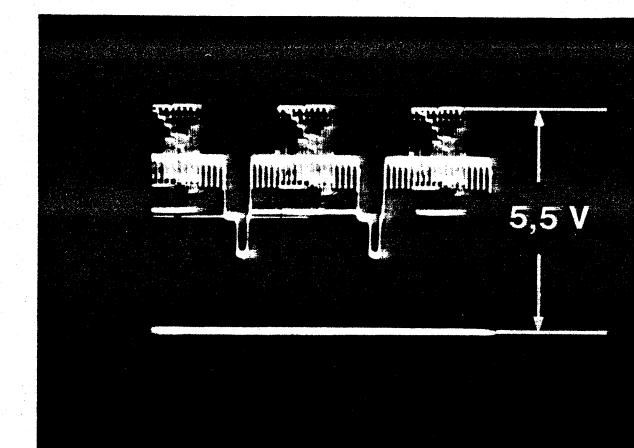


Abb. 1

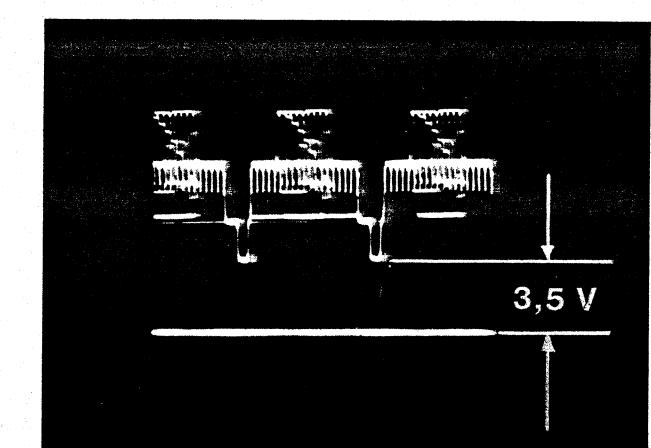
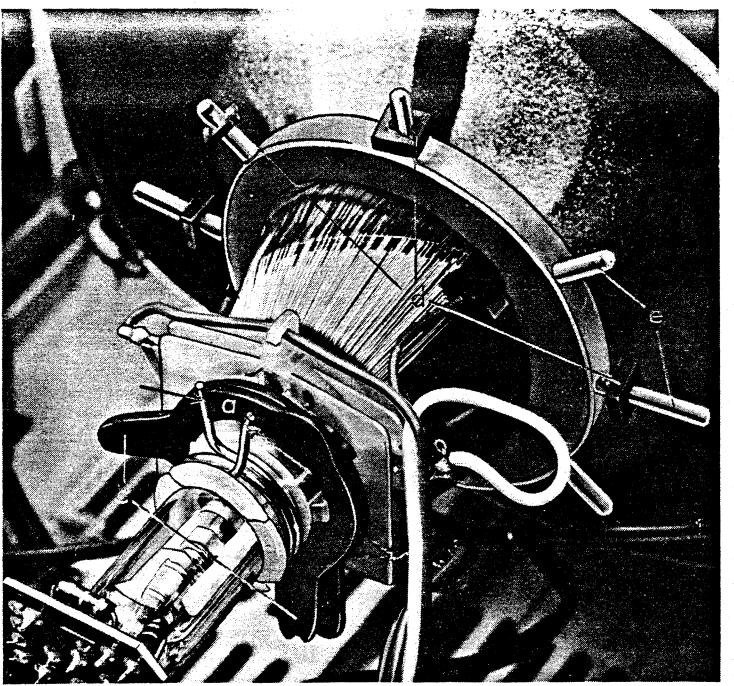


Abb. 2



## Hilfsregler-Einstellungen

Triumph 1421, 1428 U, 1721

Record 1421 SK, 1428 USK, 1721 SK

### Abgleichvorarbeiten

Antennensignal über Tuner einspeisen (normgerechtes Testbild). Kontrast voll aufdrehen und Helligkeit normal einstellen.

### Einstellen der Bildfrequenz (Vertikalfrequenz)

Variieren Sie den Regler **B** (R 444), bis das Bild nicht mehr nach oben durchläuft. Anschließend empfiehlt es sich, das Potentiometer noch ein kleines Stück weiterzudrehen, damit die Automatik genügend Reserve erhält.

### Die Bildhöhe

läßt sich mit dem Potentiometer **BA** (R 452) einregeln. Die Bildamplitude ist so einzustellen, daß bei 220 V Netzspannung und betriebswarmem Gerät das Bild oben und unten ca. 2 mm größer ist als das Bildfeld. Die Einstellungen von Bildamplitude und Bildlinearität sind in geringem Maße voneinander abhängig.

### Bildlinearität

Zu dieser Justierung ist ein Schachbrettmuster oder ein anderes elektronisches Testbild (evtl. mit Kreisen) erforderlich. Das Nachregeln erfolgt mit dem Potentiometer **BL** (R 456). Es ist so einzustellen, daß die Felder gleich groß sind bzw. die Kreise keine Abweichungen aufweisen.

### Zeilenlinearität

Die Zeilenlinearitätsspule **ZL** verändert die Geometrie in horizontaler Richtung. Sie ist nicht abstimmbar.

### Einstellen der Betriebsspannung **UB**

Röhrenvoltmeter an **+A**, mit R 524 ist eine Spannung von 11 V einzustellen. Dabei ist zu beachten, daß der Schleifer des einzustellenden Reglers aus Richtung R 525 herkommend (von der niedrigen zur hohen Spannung) abgeglichen werden sollte.

### Abgleich der Zeilenfrequenz (Horizontal-Frequenz)

Hierzu ist ein Testbild erforderlich. Punkt 6 (IC 411) nach Masse kurzschließen. Regler **Z** so einstellen, daß der Austastbalken auf dem Bildschirm senkrecht steht. Kurzschluß am Punkt 6 (IC 411) entfernen.

### Einstellen der Regler **RA**, **RV** und **WP** siehe Rep.-Helperblatt „Tuner ZF-Baustein“

### Bild-Einstellung

Bei verkantetem Bild muß die Ablenkeinheit gedreht werden. Dazu ist der Klemmring **a** an den beiden Enden zusammenzudrücken (s. Pfeile). Nun läßt sich das ganze Ablenkjoch (ohne Gewaltanwendung) so weit um die Röhrenachse drehen, bis die Kanten des Bildes in der gewünschten horizontalen bzw. vertikalen Richtung verlaufen. Beim Drehen ist die Ablenkeinheit fest gegen den konischen Teil der Bildröhre zu schieben, damit Unschärfe und Ausblendung vermieden werden.

Alle Einstellungen am Ablenkjoch sind bei herausgeklapptem Chassis durchzuführen (siehe dazu Abbildung).

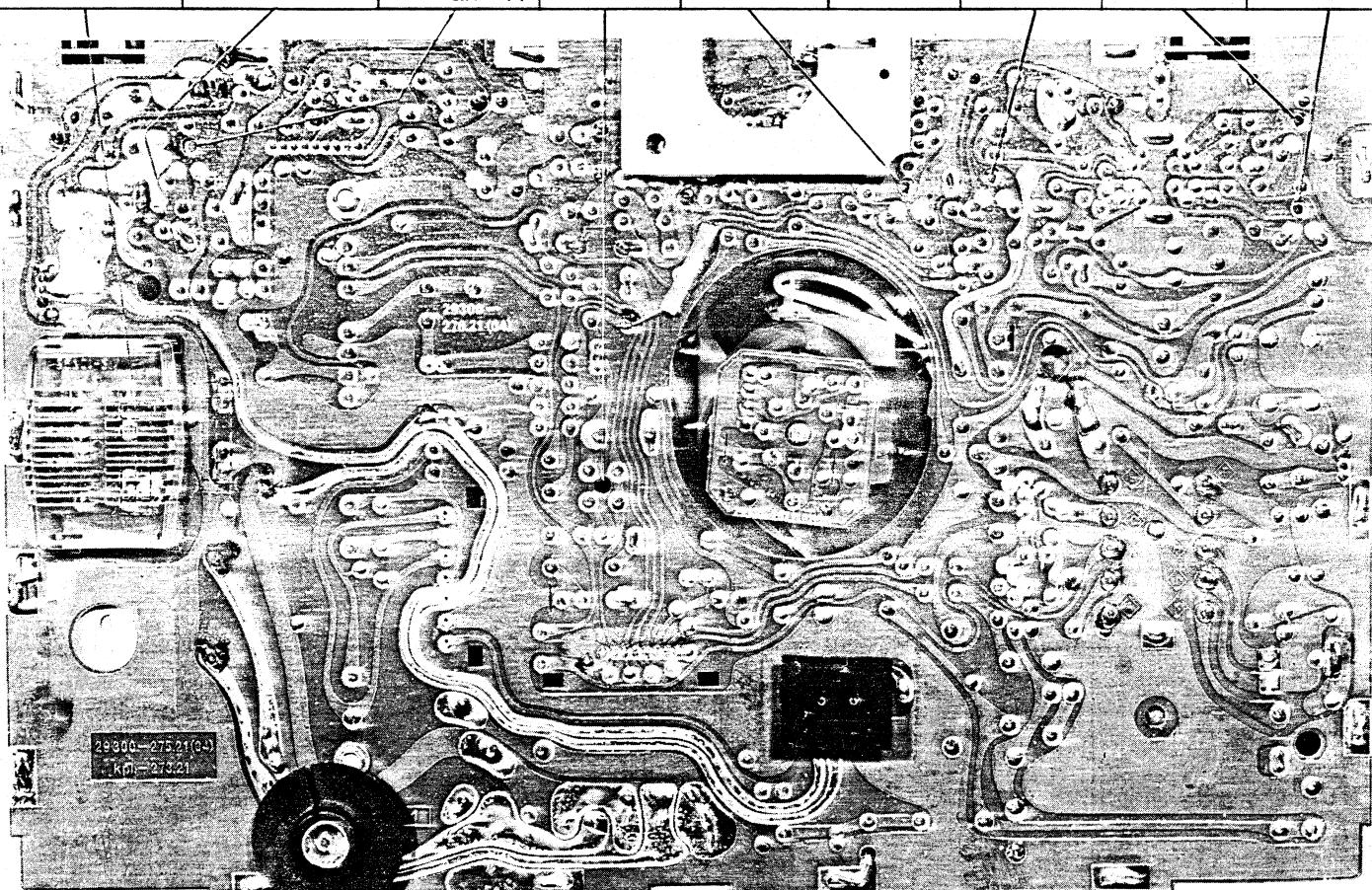
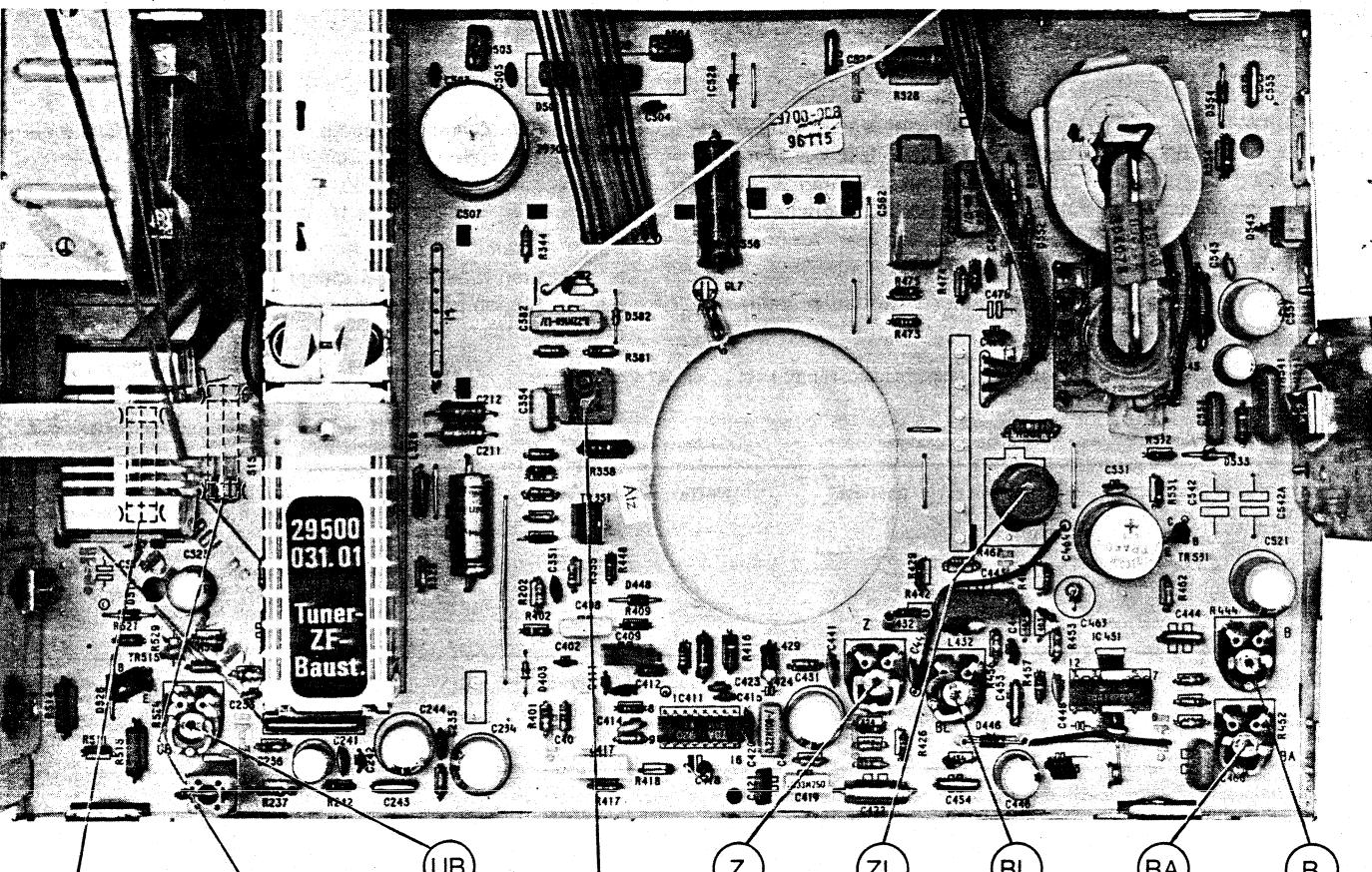
### Einstellen des Bild-Mittelpunktes

Falls das Bild zu tief, zu hoch oder seitlich verschoben am Bildschirm erscheint, kann es mit Hilfe der beiden Zentriermagneten **c** in die richtige Lage gebracht werden. Durch Verdrehen der Ringe zueinander wird die Stärke der Verschiebung und durch gleichförmiges Verdrehen beider Ringe auf ihrer Halterung die Richtung der Verschiebung beeinflußt. Ein solches Nachstellen ist normalerweise jedoch nur nach dem Auswechseln der Bildröhre oder des Ablenkjoches erforderlich.

### Die Begradiung an den Bildrändern

Die Kissen-Verzeichnungen an den Bildrändern lassen sich durch Anbringen von Entzerrer-Magneten **d** beseitigen, die an den Zapfen **e** befestigt werden können.

## Bestückungsseite



## Lötseite

# Triumph 1428, Record 1428 SK Rundfunkteil

## Abgleich-Anleitung

### Allgemeines

Der UKW-Modul I wird von außen mit der Versorgungsspannung  $+11\text{ V}$  und der Abstimmspannung  $2,12\text{ V} \pm 15\text{ mV}$  /  $9\text{ V} + 300\text{ mV}$  gespeist. Die Versorgungsspannung liegt mit  $+11\text{ V}$  an Punkt 3 und Masse Punkt 2. Die Abstimmspannung an Punkt 1 und Masse Punkt 2. Für den Antennenanschluß ist eine separate Buchse vorgesehen.

Die Abstimmspannungen werden einer externen brumm- und

**FM-ZF-Abgleich 10,7 MHz** Empfangsfrequenz von  $96\text{ MHz} \triangleq \text{ca. } 4,7\text{ V}$  einstellen.

Abgleich-Reihenfolge	Ankopplung des Wobblerausgangs	Sichtgeräteanschluß	Abgleich
Kreis 19202-609.97	an Punkt $\Delta$ über $5\text{ pF}$	NF-Tastkopf an Punkt $\Delta$	Kern des Kreises (a) in obere und untere Anschlagstellung bringen, dabei Höhe der ZF-Kurve beobachten. Die Kernstellung mit der niedrigsten ZF-Kurve auswählen. Kreis (b) auf Maximum und Symmetrie. Der HF-Pegel soll hierbei nur so hoch gewählt werden, daß sich die ZF-Kurve gerade aus dem Rauschen abhebt.
Filter I	an Punkt $\Delta$ über $5\text{ pF}$	NF-Tastkopf an Punkt $\Delta$	Mit Kreis (a) Symmetrie und maximale Linearität der Demodulator-Kurve einstellen. Wobblerausgangsspannung $5\text{ mV}$ : Höckerabstand $\sim 280\text{ kHz}$

Die Mittenfrequenz wird durch die Resonanzfrequenz der Keramikschwinger bestimmt.  
Das Keramikschwingerpaar muß jeweils übereinstimmende Farbkennzeichnung und gleiche GRUNDIG-Bestellnummer aufweisen.

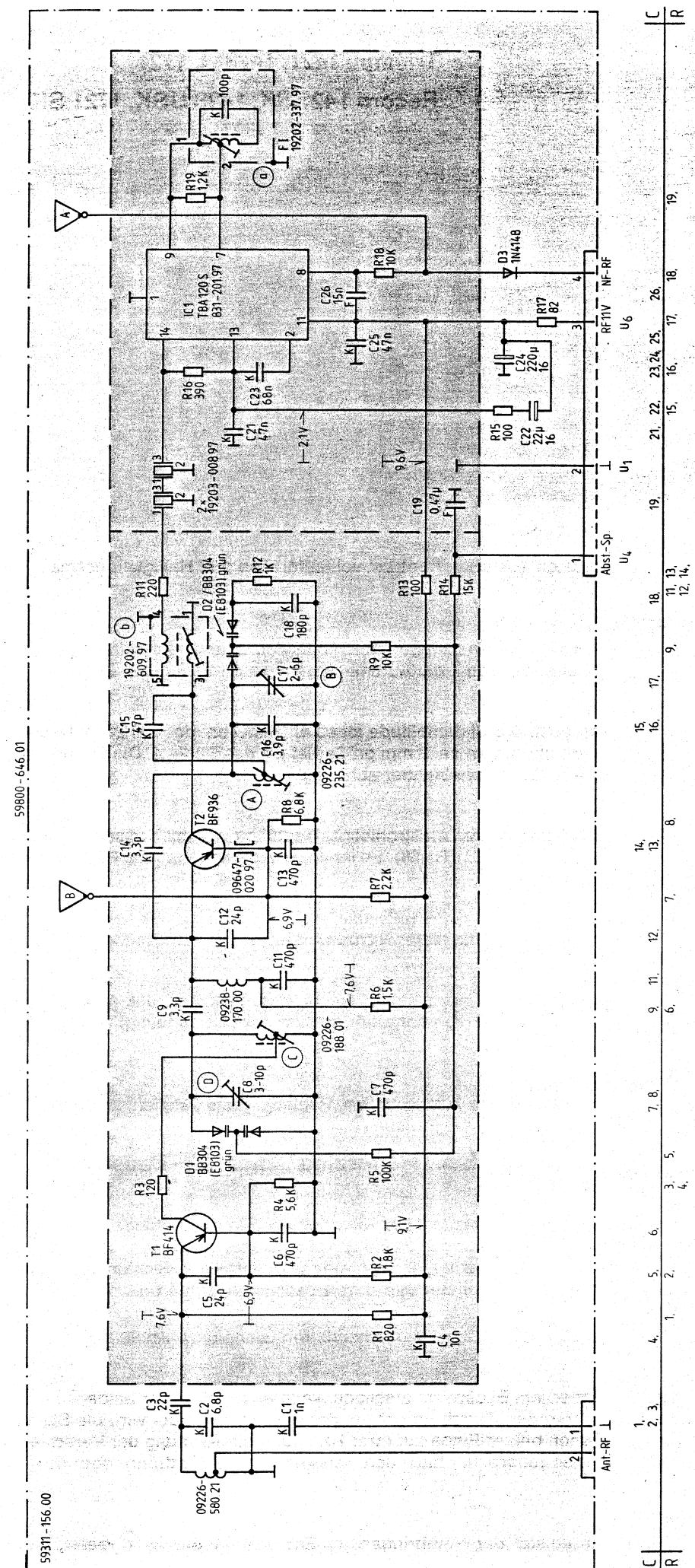
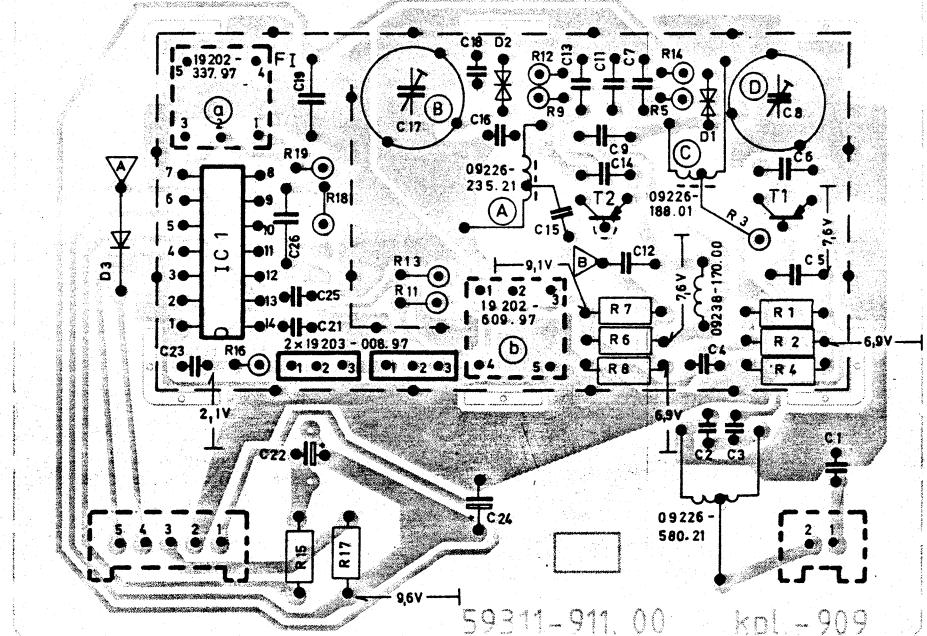
Farbkennzeichnung für 19203-008.04 SFE-10,7 MS für 19203-008.29 10,7 MF

Farbpunkt schwarz  $10,64 \pm 0,03\text{ MHz}$   
Farbpunkt blau  $10,67 \pm 0,03\text{ MHz}$   
Farbpunkt rot  $10,70 \pm 0,03\text{ MHz}$   
Farbpunkt orange  $10,73 \pm 0,03\text{ MHz}$   
Farbpunkt weiß  $10,76 \pm 0,03\text{ MHz}$

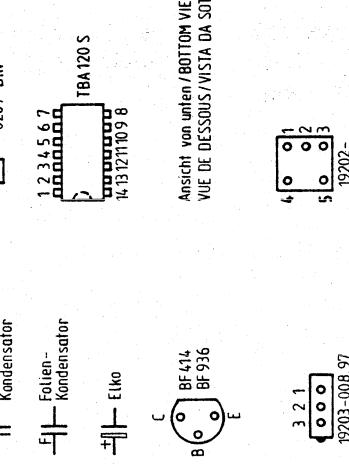
### FM-Oszillator- und Zwischenkreisabgleich

Meßender-Frequenz	Abstimm-Spannung	Oszillator	Zwischenkreis	Schwing-Spannung	Bemerkungen
88 MHz	$2,25\text{ V}$	(A) unteres Maximum	(C) oberes Maximum	95 mV	HF-Signal an Antennenbuchse $75\text{ }\Omega$ anlegen. Alle Abgleichvorgänge wechselweise mit L und C bei möglichst kleinem HF-Pegel wiederholen, bis optimale Einstellung erreicht ist.
102 MHz	$7,65\text{ V}$	(B) Maximum	(D) Maximum	100 mV	

Druckschaltungsplatte  
(Lötseite)



Schaltbild UKW-Modull 1  
29800-646.01



Wellenbereiche:  
WAVE BANDS:  
UKW-FM 87,5 ..... 104 MHz  
GAMMES D'ONDES:  
GRAMME D'ONDAS:

19202-

Anmerkungen vorbehalten  
ALTERATIONS RESERVED  
MODIFICATIONS RESERVÉES  
CON RISERVA DI MODIFICA

19202-